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THE ROLE OF TECHNOLOGY IN SHAPING UNIVERSITY STUDENTS' ATTENTION, ACADEMIC SUCCESS, AND MOTIVATION

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Abstract

The study aimed to investigate the role of technology in shaping university students' attention, academic success, and motivation. To achieve the objectives, this study used descriptive survey design. The sample of the study was 49 students and 32 teachers of education department from the universities of Southern Punjab (Multan, D.G. Khan, Bahawalpur) was selected by following simple random sampling technique. Self-developed and validated two questionnaires were used to collect data (One questionnaire was for teachers and other was for students). The researcher employed both descriptive statistics and inferential statistical techniques to examine the data gathered from the participants. The data obtained from the study instrument (questionnaires) was subsequently analyzed using the Statistical Package for Social Sciences (SPSS) software application for statistical analysis. The research revealed that there is a significant role of technology in shaping university students' attention, academic success, and motivation.

Keywords: Technology, Students 'Attention, Students 'Academic Success, Students 'Motivation, University Level.

Introduction

Educational reform without technology is not possible. The university's education system in under developing countries like Pakistan needs to bring changes in order to meet the race of technology of developed countries, because they have adopted the use of technology in all fields especially in education from last decade. But we are still unaware from the importance of technology. The use of technology ensures the improvement in learning. The application of educational technology includes educational and professional development of both teacher and student (Ahmed, 2019).

Traditional teaching methods, such as the blackboard and master class, were not able to demonstrate pupils the reality of professional life, especially in technical careers. It's critical to consider how students will react to new technology when implementing it in the classroom. To better their understanding of a course, students are more inclined to use technology if they believe it has features that are both fascinating and useful (Ahirwar et al., 2020).

Universities will now place an even greater focus on the use of technology, according to the common core standards and their emphasis on technology. The ever-increasing global production of new technologies makes technology an important topic for students to study. More meaningful learning can be achieved with the help of technology. Math, English, physics, social studies, and all other university courses can benefit from the opportunities for hands-on learning made possible by technological advancements. Because of this, kids are able to work together and gain knowledge from each other. The combination of these factors has the potential to improve student motivation and learning (Albahlal, 2019).

When many of our teachers haven't even adopted educational technology, how can they expect to teach their kids how to participate fully in today's digital world? We must start from the beginning because we have lost so much time. Educators are the most effective conduits for disseminating information about new technologies to students. To be an active generation for the future, students will be able to play a vital part in the country (Andriani, 2019).

It shouldn’t go without saying that educators must first be familiar with instructional technology and be able to use it effectively. Educators should educate their pupils about the benefits of using technology in the classroom and how it may help them catch students' attention in the classroom and motivate them to study. Experimentation was conducted to examine the impact of technology (laptops, educational games, and films) on students' motivation and academic performance. Teachers who have access to technology have an advantage over those who don't. Salam et al.(2021) Students can be inspired to learn more about a subject by using technology in new and exciting ways. Attention is the most critical aspect in learning; without it, students will not be able to achieve their full potential as learners. When teaching, teachers must ensure that their students are paying attention. His teaching method necessitates frequent activity swaps in order to keep students engaged. So it's crucial to figure out what motivates students, and technology could be one solution to this problem (Bdiwi et al., 2019).

However, in our country, there is still much work to be done in this area because technology is a novel means of teaching and learning, which many countries have already adopted as a medium of instruction and knowledge (Asad et al., 2020).

Literature Review

In order to increase student engagement in a relevant and intellectually authentic curriculum, technology has the potential to be a fantastic learning tool, according to Blikstadand Klette (2020). Technology is not an end in itself, but rather a tool to achieve other ends. Whenever it seems to be the best option for helping children learn, go ahead and use it. In the right hands, technology can be a powerful tool. Children with special needs and those learning English can both benefit from its use. Properly integrating technology in the classroom allows students to learn how to use it properly and become proficient with increasingly complex programs that they will use independently as they get older.

We must ensure that youngsters acquire the necessary skills to exploit technology promptly, given its pervasiveness in our everyday lives. They gain confidence and expertise in their computer abilities at an early age due to their use of technology. Modern students have grown up with a plethora of electronic devices at their fingertips, so it's no surprise that they're at ease utilizing these tools in the classroom. Teachers in higher education can actively involve their students and make the classroom a more pleasant place to learn by demonstrating and using a variety of technological tools (Chakraborty et al., 2021).

The advent of new information and communication technologies (ICTs) has been a powerful factor in the global revolution of education. In Pakistan, the usage of information and communication technologies (ICTs) and online learning has grown in the past decade. The utilization of information and communication technologies (ICTs) and online education is at the center of Pakistan's present educational policy. According to

public expert norms for educators, teachers should include ICTs into their lessons and support online learning platforms (Asad et al., 2020). Digital tools for education are easy to use in the classroom, and their focus on formative assessment helps pupils thrive. A new dynamic approach made possible by technological advancements can facilitate the future systematic implementation of instructional games in classrooms (Chang et al., 2022).

The use of textbooks to learn new material has long been fundamental to the educational system. But in classrooms across the globe, digital curricula that improve students' skills and performance are getting a lot of attention. Examining the impact of students' use of ICT on their academic achievement is the primary objective of this essay. Pakistani public colleges are digitally behind their private counterparts due to a lack of funding and resources, while private universities recognize the importance of technology in the classroom and prioritize its use (Saleem et al., 2019).

In other developed countries many types of technologies have been used for educational purposes some of the technologies are described here, some of these technologies have rarely been used in our universities. From this we can assume that far our education system is from the world of technology. Students were taught with an OHP or have taught using one, and that fact shows that just how much effect they had in the classroom(Cidral et al., 2020).

Students' interest and motivation can be increased by integrating technology and classmate discussions on books, according to another study. These small-group literary conversations make use of online technology such as wikis, literature circles, and book clubs. It's great that technology allows children to connect with people from other universities, states, and nations. Students can be exposed to a variety of viewpoints and cultures through the use of this type of technology. A sense of community and positive social contact can be fostered by participating in online literature discussions (Costa et al., 2021).

According to Gomez et al. (2021), who studied the impact of technology on student motivation, students can be actively involved in their own learning through the use of technology in and out of the classroom. It should be emphasized that this wonderful instrument should be used moderately. Teachers ought to be in control when it concerns imparting mathematical knowledge to students. As teachers, we know that the most effective way to capture students' interest and help them learn is through blended learning, which involves using many platforms to present material. Each student must find their own unique solution to this equation. Researchers in Pakistan (Quetta) looked at how students' use of technology affected their grades. Technology and students' performance in the classroom were found to be related, according to the study. Educational practices and academic achievement will be profoundly affected by the ongoing integration and improvement of information and communication technology into current schooling. Many think that pupils' academic performance may be greatly improved if teachers used technology in the classroom. Rana (2021) found that students whose schools used technology-integrated learning systems performed better academically.

This study surveyed 150 university students in the Peshawar District, KP region of Pakistan, who attended both public and private universities. According to the results, students' academic achievement and the overall quality of education are both enhanced by

the use of ICT. Policymakers can use the study's findings to inform the development of technology-based curricula and the funding of public institutions' information and communication technology infrastructure. Research also shows that public university students can benefit from a high-quality education, which can help close the current digital gap (Khokhar & Javaid, 2022).
Elective instructors conducted six phenomenological interviews. The results provided strong evidence that online media might be a powerful tool for bringing students from diverse backgrounds together in engaging and diverse learning environments. It was suggested that teachers spent time using online media in the classroom for academic objectives, and that teachers participated in these forums for professional development and to network with like-minded peers. Due to the fact that our modern, technologically advanced society revolves around the Internet and new forms of communication, it is imperative that educators understand the value of interpersonal interaction (Khurshid et al., 2023).

Using 4,996 students, researchers in Turkey looked at how students' use of ICT affected their performance in math and science. The data came from the Program for International Student Assessment (PISA), which is a standardized test administered to Turkish university students. Results showed that students' use of ICT both at school and at home significantly improved their math and science grades. Scientific and mathematical concepts are better grasped by kids who spend a lot of time with technology. Curriculums should incorporate current information and communication technology (ICT) due to its positive benefits on student learning (Klimova, 2019).

It became visible that data and correspondence technology decidedly influences understudies' scholarly accomplishment and maintenance and ICT was seen as really convincing, viable and important in educating of science when diverged from traditional procedures of instructing. It is suggested that modern technology should be utilized in showing science for upgrading understudies' scholarly accomplishment at auxiliary level (Chen, 2020).

Our education policy is also trying to implement technology in the field of education. In Pakistan some of the researches on the effects of technology on student’s achievement are present here. But many other aspects are still researchable because there is also a difference of the level of students in Pakistan from the level of students of developed countries like America and UK. So this research will fill the gap and try to assure the importance of technology for student’s learning and success in the coming decade (Sabir&Naureen, 2017).

After studying the above literature it is proved that technology has been the most interested topic from two decades. A bunch of work has done in this field. But it has also observed that foreign countries and especially developed countries have paid much attention in this field even our neighbor country India is developed in the field of technology.

Significance of the Study

Technology is considered as an important part of educational process. Both positive and bad impacts can be attributed to it. Because of its usefulness, both students and teachers should make use of it. Consequently, every nation needs to implement a modernized educational system that makes use of technology. This study will be beneficial for

teachers; they can get advantage of it for developing the motivation and attention level which is directly with their achievement. Students can also take its benefit because when they will observe a technologically rich environment in learning process they will adopt it by knowing its positive features. Training department can also quote it in their training process of teachers.

Objectives of the Study

The objectives of the study were:

1. To analyze the effect of technology on students' academic achievement.
2. To assess the effect of technology on students' motivation.
3. To evaluate the attention of student with the use of technology.
4. To ascertain the difference between respondents' opinion on the base of demographics i.e. gender, age, locality, qualification, teaching experience.

Research Questions

The study seeks to answer following research questions.

1. To what extent does technology impact pupils' ability to learn?
2. How has technology affected the drive of today's students?
3. How does the use of technology impact the academic performance of students?
4. Does the opinion of respondents vary significantly according to demographic factors such as gender, age, location, qualification, and teaching experience?

Research Design

A cross-sectional survey design was employed in this investigation. The use of a cross-sectional survey is typical in observational studies. Both the exposures and results of the individuals are evaluated in an equal measure in a cross-sectional study. This study utilized a questionnaire that was self-developed for both students and teachers. The research used a quantitative methodology.

Population, Sample and Sampling Technique

The population consisted of all students and faculty in the education departments of public and private universities in Southern Punjab (Multan, D.G. Khan, and Bahawalpur). The study employed the simple random sampling technique to select a sample of 49 students and 32 teachers from the department of education of public and private universities in Southern Punjab (Multan, D.G. Khan, and Bahawalpur).

Instrument of Study

The data was collected using a questionnaire that was both self-developed and validated. The questionnaire was drafted in accordance with the supervisor's discussion and the literature review. It was composed of 15 items for students and 25 items for teachers. Expert opinions are rational perspectives or remarks provided by a group of designated specialists, which are based on a

thorough examination of logical evidence and also well-qualified evaluations. An expert opinion was obtained, and the questionnaire was updated to include all of the experts' recommendations.

Reliability of the Tool

The Cronbach's alpha method was employed to assess the instrument's reliability. The table below mentions the reliability of the tool.

Table1

Reliability of the tool

Sr No.	Category	No. of items	Cronbach's Alpha
1	Teachers	25	0.79
2	Students	15	0.74

Data Collection

The tool was implemented through the utilization of a Google form, email, and manual procedures. The researcher gathered the data using a combination of different sources and by utilizing tools such as Google forms and in-person meetings. A questionnaire was disseminated to a total of 32 educators. A total of 31 teachers completed and submitted the questionnaire, resulting in a return rate of 96.8%. Similarly, a questionnaire was distributed to 49 students from certain universities, and 46 students completed and returned the questionnaire, resulting in a response rate of 93.87%.

Data Analysis

The data were evaluated using statistical methods such as frequency analysis, t-tests, mean calculations, standard deviation calculations, and ANOVA.

Analysis of Teachers Data

Table2

Factor wise Mean of Teacher's Data

Sr.No.	Factors	Mean
1	Students 'academic results enhanced after using technology for instruction.	4.16
2	Using technology in class is helpful to motivate students.	4.49
3	Use of technology in class can attract the attention of students	4.26
4	Demographic factors have their effect on technology implication.	3.24

Table 2 displays the average scores for different factors related to the statements. The use of technology for instruction has led to improved academic results for students, as indicated by the mean value of 4.16. Additionally, the use of technology in the classroom has proven to be helpful in motivating students, as supported by the mean value of 4.49. Teachers believe that incorporating technology in the classroom can capture students' attention, which is further supported by the mean value of 4.26. According to students, demographic factors also influence the effectiveness of technology implementation, as indicated by the mean value of 3.24.

Table 3 *Difference between Teachers' Opinions on the base of gender*

Variables	Category	N	Mean	SD	Df	T	Sig.
Gender	Male	21	3.7948	13.92474	26	-.304	.805
	Female	10	3.4230	17.65692			

According to Table3, male sample teachers had a higher opinion of the impact of technology on university students' attention, academic success, and motivation (Mean = 3.7948) compared to female teachers (Mean = 3.4230). A p-value larger than 0.05 indicates that there is no statistically significant difference in the opinions of teachers.

Table 4 *Difference between Teachers' Opinions on the base of Locality*

Variables	Category	N	Mean	SD	Df	T	Sig.
Locality	Rural	11	3.4231	18.81236	26	-.431	.199
	Urban	20	3.7948	13.20462			

Table 4 indicates that urban teachers held a more favorable view of the impact of technology on university students' attention, academic success, and motivation compared to rural educators (Mean=3.4231 vs. 3.7948).Thus, there were significant differences in instructors' perspectives based on their geographical location. The p-value of 0.199 is bigger than the threshold of 0.05, indicating that the result is not statistically significant. Teachers' perspectives vary substantially based on their geographic location.

Table 5 *Difference between Teachers' Opinions on the base of Designation*

Variables	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1288.190	2	644.095	3.691	.039
Within Groups	4362.524	25	174.501		
Total	5650.714	27			

Table 5 presents a comparison of teacher attitudes based on their designation. The significance value of (.039) is below the threshold of 0.05, indicating a significant difference in the views of teachers based on their designation.

Table 6 *Difference between Teachers' Opinions on the base of Academic Qualification*

Variables	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	967.314	1	967.314	5.37	.029
Within Groups	4683.400	26	180.131		
Total	5650.714	27			

Table 6 presents a comparison of teacher perspectives based on their academic qualification. The p-value of 0.029 is statistically significant at a significance level of 0.05. The perspectives of teachers vary substantially based on their academic qualifications.

Table 7 *Difference between Teachers' Opinions on the base of different Universities*

Variables	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3123.619	3	1041.206	9.888	.000
Within Groups	2527.095	24	105.296		
Total	5650.714	27			

Table 7 displays varying viewpoints of teachers from different universities. The calculated p-value is higher than 0.000. Statistically, teachers' opinions vary across different universities.

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Table 8 *DifferencebetweenTeachers'Opinions by Teaching Experience*

Variables	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1051.714	3	350.571	1.829	.169
Within Groups	4599.000	24	191.625		
Total	5650.714	27			

Teaching experience influences teachers' perceptions. Table 8 demonstrates that the calculated significance value (0.169) is greater than 0.05. There is no discernible disparity in the viewpoints of teachers based on their level of teaching experience. The assertion is supported by a F value of 1.829.

Analysis of Student's Data

Table 9 *Differences between Student's Opinions based on Gender*

Variables	Category	N	Mean	SD	Df	T	Sig.
Gender	Male	25	3.77	.776	46	.318	.738
	Female	21	3.70	.610			

Table 9 presents a comprehensive analysis that examines and draws conclusions based on gender. The variable of gender had a notable impact (df = 42, t = .318, sig.738 > .005) on the viewpoints of students about the influence of technology on university students' attention, academic success, and motivation. According to Table 9, male students in the sample had a greater opinion of the impact of technology on university students' attention, academic success, and motivation (mean=3.77) compared to female students in the sample (mean=3.70). Therefore, there is no disparity in student perspectives regarding the impact of technology on university students' attention, academic success, and motivation based on gender.

Table10 *DifferencebetweenStudents'OpinionsbyLocality*

Variables	Category	N	Mean	SD	Df	T	Sig.
Locality	Urban	27	3.7021	.52888	46	-.433	.234
	Rural	19	3.7948	.86586			

According to table 10, urban sample students showed a more favorable view towards the influence of technology on university students' attention, academic success, and motivation (Mean=3.70) compared to rural students (Mean=3.79). The calculated p-value of 234 is greater than 0.05, suggesting that there is no statistically significant difference in the attitudes of urban and rural students.

Table11 *Difference between Students' Opinions by University*

Variables	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.866	6	.955	2.080	.118
Within Groups	18.376	40			
Total	21.242	46			

Table11 displays the viewpoints of students relevant to each university. The calculated p-value, 0.118, above the threshold of 0.05. This suggests that there is no substantial divergence in student perspectives based on the type of university.

Discussion

1. Educational reform without technology is not possible. The education system in

under developing countries like Pakistan needs to bring changes in order to meet the race of technology of developed countries, because they have adopted the use of technology in all fields especially in education from last decade. But we are still unaware from the importance of technology. The use of technology ensures the improvement in learning (Suleman et al., 2022).

2. We live in a world where technology plays such a vital role. Before, many vocations did not necessitate the use of technology. Modern education focuses on increasing student achievement while using technology as an educational tool. Policymakers and educators are reiterating their dedication to programmes and teaching methods that have the greatest impact on teaching and learning outcomes.. To have a lasting impact on how kids learn, we need to make use of technology in both teaching and learning, given how widely it is used today (Tabassum & Farooq, 2021).
3. A benefit of employing this technology, according to the students, was obtaining rapid feedback from the instructor. Students who took part in the research also said that reading the work of their peers helped them improve their vocabulary, spelling, and sentence structure (Nair, 2020).
4. Research has demonstrated that integrating technology into the classroom enhances meaningful learning, improves utilization of previous material, promotes hierarchical cognitive structure, facilitates elaboration, encourages deeper processing, and fosters new behaviors. It is imperative to take into account the potential reactions of pupils while integrating technology into the classroom. Same as per Naik et al. (2021), students are more inclined to embrace and utilize new technology in the classroom if they perceive the features as attractive and advantageous to their education.

Conclusions

The overall conclusion of the study aligns with the study's aims were:

1. In order to instill a basic understanding of technology in the next generation, we must begin in the classroom. Students will not only be transformed into future leaders, but they will also be better equipped to serve their country as a whole.
2. The teachers who use technology are at advantage over teachers who do not have this accessibility. Technology can also motivate students to dive deeper into the topic on a different level than they were ever before.
3. The most important factor in learning is attention. Unless the learners do not give proper attention he / she will not be able to learn at optimal level. When teaching, a teacher must ensure that the student's attention is fully engaged at all times. In his/her teaching style he/she needs to change the activities rapidly to capture attention once again. It is therefore important to know that which things appeal to learners and using technology in this manner would definitely be an option to take into consideration.
4. It may be concluded on the base of findings that there is significant The Role of Technology in Shaping University Students' Attention, Academic Success, and Motivation

Recommendations

Based on the results, the study recommended the following::

1. Based on the finding of the study, it is recommended that usage of technology should be increased in the classroom.
2. Teacher should be well aware about the usage and importance of technology.
3. All required technology should be available in the classroom.
4. Technology awareness programs should be held at higher education level.

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